

## **CLAIMS:**

1. A system for evaluating vocal performance, comprising:

an entry device that provides a sequence of blocks of samples from the singer's voice  
5 signal to be evaluated, and a sequence of blocks of samples from a reference voice signal, and on  
the measurement of the similarity between the signals supplied by the entry device, through the  
processing of multiple aspects, and

a device for the delivery of information to be used for the generation of visual and  
auditory feedback for didactic purposes in relation to the partial results of said comparisons, and  
10 visual and auditory feedback for didactic purposes in relation to the final result of said evaluation  
of similarity, as well as a summary of the evaluation of similarity of each one of said aspects;  
method of adaptation that allows the addition, removal, or modification of the aspects of said set  
of aspects, which therefore makes the device modular, allowing the adjustment of the level of  
quality of said evaluations of similarity carried out based on the processing of the singer's voice  
15 and the reference voice, so as to adequate said evaluations of similarity to the computational  
resources available, therefore providing the device with scalar characteristics.

2. The evaluating system according to claim 1, wherein the evaluating system is likely to  
be embedded into various systems, such as systems of vocal substitution in songs (*karaoke*),  
20 processors of DVD, CD apparatus, etc., digital signal processors (DSP), or any other platforms,  
whether as software or hardware.

3. The evaluating system according to claim 1, further comprising a feedback device that uses icons, phrases and sounds to provide the singer evaluated during the execution of the song, visually and acoustically, with instantaneous and individual evaluations of each aspect evaluated based on the results of the processing of the voice of the singer evaluated and the reference voice, in periods determined experimentally, and, at the end, a summary reporting the performance of the singer evaluated in each aspect, so as it may indicate how the singer evaluated may improve his/her performance during the execution of the song and on the next time.

4. The evaluating system according to claim 1, wherein the system allows the alteration, by adding, removing or modifying aspects to be used in the evaluation, and modification of the processing of the voice of the evaluated singer and the reference voice, making the system modular and scalar.

5. The evaluating system according to claim 1, wherein the system includes a method of adequateness and calibration of the device for evaluating vocal performance to the set of computational resources available, aiming to maximize the quality of the evaluation, by optimizing the similarity between the results collected from the evaluation of performance of a heterogeneous group of singers by a heterogeneous group of human evaluators, and the results collected from the evaluation of the same executions of the same group of singers by said evaluating device submitted to the limitations of computational resources applicable and to said pertinent alterations.

6. The evaluating system according to claim 5, further comprising a feedback device that uses icons, phrases, and sounds to provide the singer visually and auditorily with a global evaluation of his/her performance at the end of the song, based on the results of the processing of the voice of the singer evaluated and the reference voice, and calibrated by said method of

5 adequateness and calibration, in order to simulate the evaluation of a heterogeneous group of human evaluators.